

IN THE SPECIFICATION:

Paragraph beginning at line 20 of page 1 has been amended as follows:

According to the EL element, the transparent electrode 31 is used as an anode and the electrode 34 is used as a cathode. Holes and electrons which are injected from the anode and the cathode, respectively, are recombined in the light emitting layer 33, thereby emitting EL light 211. The EL light 211 transmits through the substrate 1 and is emitted ~~to the external~~ externally of the EL element.

Paragraph beginning at line 13 of page 2 has been amended as follows:

Also, Fig. 7 shows a conventional structure of another EL element. As shown in Fig. 7, in the EL element, a transparent electrode 31 made of ITO or the like, a hole transporting layer 32, a light emitting layer 33, and an electrode 35 made of aluminum or the like are laminated on a substrate 1. Here, an EL element portion 12 is composed of the transparent electrode 31, the hole transporting layer 32, the light emitting layer 33, and the electrode 35. According to the EL element, the transparent electrode 31 is used as the anode and the electrode 35 is used as the cathode. Holes and

electrons which are injected from the anode and the cathode, respectively, are recombined in the light emitting layer 33, thereby emitting EL light 213. At this time, when a film thickness of the electrode 35 is sufficiently small (for example, 20 nm or less), EL light 212 transmits through the electrode 35 and is emitted ~~to the external~~ externally of the EL element.

Paragraph beginning at line 4 of page 3 has been amended as follows:

Also, Fig. 8 shows another structural example of a conventional EL element. In the EL element, a transparent electrode 31 made of ITO or the like, a hole transporting layer 32, a light emitting layer 33, an electron transporting layer 36, and an electrode 37 made of ITO or the like are laminated on a substrate 1. Here, an EL element portion 13 is composed of the transparent electrode 31, the hole transporting layer 32, the light emitting layer 33, an electron transporting layer 36, and the electrode 37. The EL element having such a structure has been proposed by J. Kido et al., Yamagata University. Here, the transparent electrode 31 is used as the anode and the electrode 37 is used as the cathode. Holes and electrons which are injected from the anode and the cathode, respectively, are recombined in the

light emitting layer 33, thereby emitting EL light 214 and EL light 215 as shown in Fig. 8. The EL light 215 transmits through the substrate 1 and is emitted ~~to the external externally~~ of the EL element. The EL light 214 transmits through the electrode 37 and is emitted ~~to the external externally~~ of the EL element.

Paragraph beginning at line 1 of page 6 has been amended as follows:

The present invention has been made in view of the above ~~circumferences~~ circumstances. An object of the present invention is to provide a technique for producing an EL double-sided display device in which a thickness thereof is small, a contrast is high, and a privacy is kept.

Paragraph beginning at line 6 of page 6 has been amended as follows:

Therefore, a self light emitting display device of the present invention has the following structures. A self light emitting display device according to one aspect of the present invention ~~includes:~~ includes a self light emitting element; and a first polarization layer and a second polarization layer which ~~are provided to sandwich~~ therebetween the self light emitting element, and in the self light

emitting display device, a transmission axis of the first polarization layer is orthogonal to a transmission axis of the second polarization layer.

Paragraph beginning at line 15 of page 6 has been amended as follows:

Further, a self light emitting display device according to another aspect of the present invention ~~includes~~: includes a self light emitting element; a first polarization layer and a second polarization layer which ~~are provided to~~ sandwich therebetween the self light emitting element; a first optical phase differential layer (retardation: $\Delta n_1 d_1$) provided between the self light emitting element and the first polarization layer; and a second optical phase differential layer (retardation: $\Delta n_2 d_2$) provided between the self light emitting element and the second polarization layer, and in the self light emitting displayed device, a transmission axis of the first polarization layer is parallel to a transmission axis of the second polarization layer, a delay phase axis of the optical anisotropy of the first optical phase differential layer ($\Delta n_1 d_1$) is parallel to a delay phase axis of the optical anisotropy of the second optical phase differential layer ($\Delta n_2 d_2$) and an angle produced by the delay phase axis and the transmission axis of the first polarization layer is set to

block external light, and values of $\Delta n_1 d_1$ and $\Delta n_2 d_2$ with respect to light having a wavelength λ of 400 nm to 700 nm satisfy:

Paragraph beginning at line 17 of page 14 has been amended as follows:

Fig. 1 is a schematic sectional view showing an organic EL device of this embodiment. As shown in Fig. 1, an organic EL element portion 2 is formed on the surface of a substrate 1. The organic EL element portion 2 is sealed with a sealing structure 3, thereby composing an organic EL cell 10. A first polarization layer 4 and a second polarization layer 5 are disposed in at both ends of the organic EL cell such that transmission axes thereof are orthogonal to each other.

Paragraph beginning at line 1 of page 15 has been amended as follows:

A display principle of an organic EL device having such a structure will be described with reference to Fig. 10. The first polarization layer 4 and the second polarization layer 5 are disposed in at both sides of the organic EL cell 10. A transmission axis L7 of the first polarization layer 4 is orthogonal to a transmission axis L6 of the second

polarization layer 5. EL light 121 emitted from a light emitting portion 101 of the organic EL cell 10 transmits through the second polarization layer 5 having the transmission axis L6. Accordingly, an observer 200 visually identifies the transmitted light as polarized EL light 216. On the other hand, EL light 123 emitted from the light emitting portion 101 of the organic EL cell 10 transmits through the first polarization layer 4 having the transmission axis L7. Polarized EL light 217 is emitted to the external exterior. In addition, external light 110 transmitting through the first polarization layer 4 is converted into linearly polarized light 111, becomes linearly polarized light 112 by transmitting through the organic EL cell 10, and is absorbed in the second polarization layer 5. On the other hand, external light 90 transmitting through the second polarization layer 5 is converted into linearly polarized light 91, becomes linearly polarized light 92 by transmitting through the organic EL cell 10, and is absorbed in the first polarization layer 4. Therefore, the observer 200 observes the polarized EL light 216 on the black background and thus can visually identify a display content at high contrast. In addition, when the observer observes the polarized EL light 217 from the opposite side, the same effect is obtained.

Paragraph beginning at line 15 of page 17 has been amended as follows:

The anode (electrode 31) can be made of a conductive transparent material such as indium tin oxide (ITO). It is preferable that a thickness of the electrode 31 is 50 nm to 600 nm. In this embodiment, an indium tin oxide (ITO) electrode having a thickness of 150 nm is used. The hole transporting layer can be made of α -NPD (α -naphthyl phenyl diamine) or the like. A thickness of the hole transporting layer is preferably 5 nm to 45 nm, more preferably 10 nm to 40 nm. In this embodiment, an α -NPD layer having a thickness of 50 nm is used. The light emitting layer can be made of a tris (8-quinolinolato) aluminum complex (Alq₃) or the like. A thickness of the light emitting layer is preferably 5 nm to 45 nm, more preferably 10 nm to 40 nm. In this embodiment, Alq₃ is formed at 50 nm.

Paragraph beginning at line 5 of page 19 has been amended as follows:

Fig. 2 is a schematic view showing a sectional structure of an organic EL device according to Embodiment 2. Note that the description of the organic EL cell 10 overlapped with Embodiment 1 is omitted here as appropriate. As shown in Fig. 2, the organic EL device ~~includes~~ includes a first

polarization layer 4 and a second polarization layer 5 which are provided to sandwich therebetween the organic EL cell 10; a first optical phase differential layer 7 (retardation: $\Delta n_1 d_1$, where Δn is optical anisotropy and d is a thickness) provided between the organic EL cell 10 and the first polarization layer 4; and a second optical phase differential layer 6 (retardation: $\Delta n_2 d_2$) provided between the organic EL cell 10 and the second polarization layer 5. A transmission axis of the first polarization layer 4 is parallel to a transmission axis of the second polarization layer 5, a delay phase axis of the optical anisotropy of the first optical phase differential layer 7 ($\Delta n_1 d_1$) is parallel to a delay phase axis of the optical anisotropy of the second optical phase differential layer 6 ($\Delta n_2 d_2$) and an angle produced by the delay phase axis and the transmission axis of the first polarization layer is set to block external light, and values of $\Delta n_1 d_1$ and $\Delta n_2 d_2$ with respect to light having a wavelength of 400 nm to 700 nm satisfy the following equations.

Paragraph beginning at line 2 of page 24 has been amended as follows:

Fig. 3 is a schematic sectional view of an organic EL device of this embodiment. Note that the descriptions overlapped with above-mentioned respective embodiments are

omitted here as appropriate. As shown in Fig. 3, the first polarization layer 4 and the second polarization layer 5 are disposed in both sides of the organic EL cell 10 such that transmission axes thereof are orthogonal to each other. In this embodiment, a polarizing plate is used for the polarization layers. Further, a privacy device in the form of a shutter 203 is located outside the first polarization layer 4 so as to correspond to a light emitting region of the organic EL cell 10. The case where the organic EL device shown in Fig. 3 is applied to a folding information device as shown in Figs. 12 and 13 will be described as an example. In a state in which the information device is folded, the shutter 203 is opened. Therefore, the observer 200 can visually identify polarized EL light 220. Fig. 13 shows a state in which the portable information device shown in Fig. 12 is opened (the shutter 203 is closed). In this state, the observer 200 can visually identify polarized EL light 221. However, because the polarized EL light 220 is blocked by the shutter 203, an observer 201 cannot ~~visually identify a view~~ the display content. Thus, ~~secrets about the privacy of the~~ display data for the observer 200 can be maintained.

Paragraph beginning at line 23 of page 24 has been amended as follows:

A mechanism of the shutter will be briefly described with reference to Fig. 14. EL light 301 and EL light 302 are emitted from both surfaces of an organic EL device 303. Data related to the EL light 301 and the EL light 302 are switched over by a program such that the data can be visually identified by the observer. The shutter is composed of an opaque portion 307 and a transparent portion 306. In addition, gears 305 for driving the shutter are provided and the shutter is opened or closed by a small size motor. Therefore, the opening control of the shutter can be automatically conducted according to the open and close state of the information device. That is, there is provided an automatic opening mechanism for closing the shutter when the information device is switched to becomes the open or unfolded state and for opening the shutter when the information device ~~becomes the close~~ is switched to the closed or folded state. Thus, a folding information device capable of protecting secrets can be realized. In addition, when a manually actuatable member such as a protruding portion 308 is formed in connected to the shutter, the shutter can be manually opened or closed using the protruding portion 308. Accordingly, even when the automatic opening mechanism for the

shutter produces trouble, a display content can be visually identified. Opening portions are provided in both sides of an exterior case 304 for the portable information device so as to be capable of ensuring a display content.